



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,621	12/16/2003	Akira Shimizu	829-619	2644
23117	7590	09/29/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			ARANCIBIA, MAUREEN GRAMAGLIA	
		ART UNIT		PAPER NUMBER
		1763		

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/735,621	SHIMIZU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Maureen G. Arancibia	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 16 December 2003.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) 23-26 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-3,7-14 and 18-22 is/are rejected.

7)  Claim(s) 4-6 and 15-17 is/are objected to.

8)  Claim(s) 1-26 are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 16 December 2003 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/03: 01/05.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-22, drawn to a plasma apparatus, classified in class 118, subclass 723E.
  - II. Claims 23-26, drawn to a method of forming a thin film on a substrate using plasma CVD, classified in class 427, subclass 248.1.
2. The inventions are distinct, each from the other because of the following reasons:  
Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process, such as plasma etching or cleaning of the interior of the plasma chamber.
3. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Warren Burnam on 22 September 2005, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-22. Affirmation of this election must be made by applicant in replying to this

Office action. Claims 23-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Information Disclosure Statement***

6. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

***Drawings***

7. Figure 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

8. Claims 6 and 15-17 are objected to because of the following informalities:

It is suggested to replace the term “plurality of conductive plates” with “a plurality of conductive portions” throughout Claims 6 and 17, in keeping with the Specification (ex. Page 34, Lines 15-16). The term “conductive portions” is more descriptive of the “brush shapes” recited on the last line of each claim.

It is suggested to insert the word “each” between the words “members” and “include” on the first line of each of Claims 15, 16, and 17.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**10. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by German Patent Application Publication 3336652 A1 to Bubenzer et al. The following rejection refers to the Figures and English Abstract of this Publication.**

Bubenzer et al. teaches a plasma CVD apparatus (Figures 1 and 3), comprising an anode electrode 4 and a cathode electrode 5, which is for forming a thin film on a

substrate by performing plasma discharge between the electrodes (Abstract), comprising: a substrate holder 19 disposed between the electrodes; and one conductive member 26 disposed between the substrate holder and the cathode electrode (Figure 3; Abstract), wherein the substrate holder supports the substrate 23, and conductive member is provided between the electrode 5 and the substrate holder 19 so as to substantially cover an entire space between the electrode 5 and the substrate holder 19 (Figure 3), and the conductive member 26 is electrically connected to the electrode 5 and the substrate holder 19 (Abstract).

In regards to Claim 2, the shapes of the electrodes are plate-like shapes (Figure 3).

In regards to Claim 3, plasma discharge is performed between the electrodes by applying a voltage between the electrodes with a raw material gas supplied between the electrodes. (Figures 1 and 3; Abstract)

In regards to Claims 8 and 9, the conductive member is attached to the cathode electrode 5 and the substrate holder 19 (Figure 3).

In regards to Claim 10, the apparatus further comprises a container 1 enclosing the electrodes, the substrate holder, and the conductive member (Figure 1), the conductive member being attached to the inner surface of the container via pedestal 7.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bubenzer et al. in view of U.S. Patent 6,827,787 to Yonezawa et al.**

The teachings of Bubenzer et al. were discussed above.

Bubenzer et al. does not expressly teach that the apparatus comprises a heater integrally attached to the electrode 5.

Yonezawa et al. teaches that a heater is integrally attached to a prior art electrode 108. (Column 1, Lines 43-45)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Bubenzer et al. for a heater to be integrally attached to the electrode. The motivation for doing so, as taught by Yonezawa et al. (Column 1, Lines 43-45), would have been to heat the substrate as necessary.

**13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bubenzer et al. in view of U.S. Patent 3,241,519 to Lloyd.**

The teachings of Bubenzer et al. were discussed above.

Bubenzer et al. does not expressly teach that the apparatus comprises a tension adjusting member attached to the conductive member.

Lloyd teaches a tension adjusting member 24 attached to conductive member 28. (Figure 2; Column 2, Lines 10-30 and 62-72)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Bubenzer et al. to include a tension adjusting member attached to the conductive member. The motivation for making such a modification, as taught by

Lloyd (Column 2, Lines 70-71; Column 3, Lines 3-4), would have been to prevent the conductive member from sagging due to thermal deformation.

**14. Claims 12-14 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bubenzer et al.**

The teachings of Bubenzer et al. were discussed above.

In regards to Claim 12, Bubenzer et al. does not expressly teach that the conductive member 26 comprises a plurality of conductive members.

Nevertheless, it would have been obvious to one of ordinary skill in the art to construct conductive member 26 of a plurality of juxtaposed conductive strips. The motivation for doing so would have been to allow damaged or overly coated (Bubenzer et al., Abstract) sections to be replaced without necessitating replacement of the entire conductive piece.

In regards to Claims 13, 14, and 19-21, see the discussion of Claims 2, 3, and 8-10 above.

**15. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bubenzer et al. as applied to Claim 12, and further in view of Yonezawa et al.**

The teachings of Bubenzer et al. as applied to Claim 12 were discussed above.

Bubenzer et al. does not expressly teach that the apparatus comprises a heater integrally attached to the electrode 5.

Yonezawa et al. teaches that a heater is integrally attached to a prior art electrode 108. (Column 1, Lines 43-45)

It would have been obvious to one of ordinary skill in the art to further modify the apparatus taught by Bubenzer et al. for a heater to be integrally attached to the electrode. The motivation for doing so, as taught by Yonezawa et al. (Column 1, Lines 43-45), would have been to heat the substrate as necessary.

**16. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bubenzer et al. as applied to Claim 12, and further in view of Lloyd.**

The teachings of Bubenzer et al. as applied to Claim 12 were discussed above.

Bubenzer et al. does not expressly teach that the apparatus comprises a tension adjusting member attached to the conductive member.

Lloyd teaches a tension adjusting member 24 attached to conductive member 28. (Figure 2; Column 2, Lines 10-30 and 62-72)

It would have been obvious to one of ordinary skill in the art to further modify the apparatus taught by Bubenzer et al. to include a tension adjusting member attached to the conductive member. The motivation for making such a modification, as taught by Lloyd (Column 2, Lines 70-71; Column 3, Lines 3-4), would have been to prevent the conductive member from sagging due to thermal deformation.

***Allowable Subject Matter***

**17. Claims 4-6 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and amended to overcome the objections discussed above.**

18. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or fairly suggest that the conductive member or plurality of conductive members include **a supporting plate and a plurality of conductive plates or portions provided on the upper and lower surfaces of the supporting plate in leaf-spring, arc, or brush shapes, wherein the conductive plates or portions on the lower surface of the supporting plate are in contact with one electrode and the plates or portions on the upper surface of the supporting plate are in contact with the substrate holder.**

***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 5,656,093 to Burkhart et al. teaches that a substrate 116 is spaced from a substrate holder 108 by a conductive mask 100. (Figures 1 and 2)

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maureen G. Arancibia  
Patent Examiner  
Art Unit 1763



Parviz Hassanzadeh  
Supervisory Patent Examiner  
Art Unit 1763